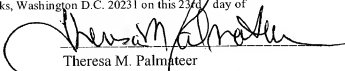


FORM PTO 170 (REV 10-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 60,130-1064	
<b>TRANSMITTAL LETTER TO THE UNITED STATES          DESIGNATED/ELECTED OFFICE (DO/EO/US)          CONCERNING A FILING UNDER 35 U.S.C. 371</b>					
INTERNATIONAL APPLICATION NO. PCT/IB99/01748		INTERNATIONAL FILING DATE October 21, 1999		PRIORITY DATE CLAIMED October 24, 1998	
TITLE OF INVENTION An Actuator Assembly					
APPLICANT(S) FOR DO/EO/US Eric Colin					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371. 3. <input checked="" type="checkbox"/> This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)). 4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (PCT Article 31). 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). b. <input checked="" type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). 6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). 7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> have been communicated by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).					
<b>Items 11 to 16 below concern document(s) or information included:</b>					
11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 14. <input type="checkbox"/> A substitute specification. 15. <input type="checkbox"/> A change of power of attorney and/or address letter. 16. <input checked="" type="checkbox"/> Other items or information: <b>CERTIFICATE OF EXPRESS MAIL</b> I hereby certify that the enclosed Documents are being deposited with the United States Postal Service as Express Mail, postage prepaid, in an envelope as "Express Mail Post Office to Addressee," mailing label No. EL668871506US, and addressed to Box PCT, Assistant Commissioner of Patents and Trademarks, Washington D.C. 20231 on this 23rd day of April, 2001.					
<div style="text-align: right;">               Theresa M. Palmateer           </div>					
<div style="text-align: right;"> <b>EL668871506US</b> </div>					

U.S. AP Herd <b>09/830096</b>	INTERNATIONAL APPLICATION NO. PCT/IB99/01748	ATTORNEY'S DOCKET NUMBER 60,130-1064																							
17. <input checked="" type="checkbox"/> The following fees are submitted: <b>BASIC NATIONAL FEE</b> (37 CFR 1.492 (a) (1) - (5) ) : Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... <b>\$1000.00</b> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... <b>\$860.00</b> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... <b>\$710.00</b> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... <b>\$690.00</b> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) ..... <b>\$100.00</b> <b>ENTER APPROPRIATE BASIC FEE AMOUNT</b> =		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: left;">CALCULATIONS</th> <th style="text-align: left;">PTO USE ONLY</th> </tr> <tr> <td colspan="2" style="height: 100px;"></td> <td></td> </tr> </table>	CALCULATIONS		PTO USE ONLY																				
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Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; text-align: right;">\$ 1,000.00</td> </tr> </table>		\$ 1,000.00																					
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Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). <b>\$40.00</b> per property		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: right;"><b>TOTAL FEES ENCLOSED</b> =</td> <td>\$ 1,000.00</td> </tr> </table>	<b>TOTAL FEES ENCLOSED</b> =		\$ 1,000.00																				
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a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>1,000.00</u> to cover the above fees is enclosed.  b. <input type="checkbox"/> Please charge my Deposit Account No. <u>50-1482</u> in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>50-1482</u> . A duplicate copy of this sheet is enclosed.																									
<p><b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.</b></p>																									
SEND ALL CORRESPONDENCE TO John M. Siragusa Carlson, Gaskey & Olds 400 W. Maple Rd., Ste. 350 Birmingham, MI 48009																									
<div style="text-align: right;">             SIGNATURE:            John M. Siragusa            NAME            46,174            REGISTRATION NUMBER         </div>																									

09/1830096

JC18 Rec'd PCT/PTO 2 3 APR 2001

60130-1064

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Eric Colin  
Serial No.: Unknown  
Filed: Herewith  
Priority: PCT/IB99/01748 Filed: October 21, 1999  
GB 98 23220.0 Filed: October 24, 1998  
Group Art Unit: Unknown  
Examiner: Unknown  
Title: AN ACTUATOR ASSEMBLY

**PRELIMINARY AMENDMENT**

Assistant Commissioner of Patents  
Washington, D.C. 20231

Dear Sir:

Please amend the application in the following particulars prior to Examination.

**IN THE SPECIFICATION:**

Page 1, before the first paragraph, please insert the following section heading:

**BACKGROUND OF THE INVENTION**

Page 1, before the second paragraph, please insert the following section heading:

**SUMMARY OF THE INVENTION**

Page 2, before the paragraph reading " The invention will now be described by way of example only with reference to the drawings in which;" , please insert the following section heading:



60130-1064

2. (Amended) The actuator assembly as recited in Claim 1 in which the pivot axis passes through the body portion.

3. (Amended) The actuator assembly as recited in Claim 1 in which the pivot axis is proximate that end of the motor remote from the pinion.

4. (Amended) The actuator assembly as recited in Claim 1 in which the gear rack includes at least one stop to limit movement of the rack relative to the body portion.

5. (Amended) The actuator assembly as recited in Claim 4 in which each stop engages the drive shaft.

6. (Amended) The actuator assembly as recited in Claim 5 in which each stop engages a portion of the drive shaft on the side of the pinion remote from the motor.

7. (Amended) The actuator assembly as recited in Claim 4 in which the drive shaft passes between the array of gear teeth and a guide portion proximate the gear teeth.

8. (Amended) The actuator assembly as recited in Claim 7 in which the guide portion is supported by each stop.

9. (Amended) The actuator assembly as recited in Claim 1 which further includes a housing in which the motor is secured.

10. (Amended) The actuator assembly as recited in Claim 9 in which the pivot is mounted on the housing.

11. (Amended) The actuator assembly as recited in Claim 9 in which the pivot includes a boss of the gear rack to which in use a lever is attached.

60130-1064

12. (Amended) The actuator assembly as recited in Claim 11 in which the boss at least partially projects through the housing.

13. (Amended) The actuator assembly as recited in Claim 9 in which the drive shaft engages the housing.

14. (Amended) The actuator assembly as recited in any one of Claim 9 in which the housing is substantially sealed.

15. (Amended) The actuator assembly as recited in any one of Claims 9 in which the housing has at least a first and second part, the parts having co-operating cut-outs to provide for at least one end of the drive shaft.

16. (Amended) The actuator assembly as recited in Claim 1 in which the pivot is mounted on the body portion.

18. (Amended) The actuator assembly as recited in Claim 17 in which the motor is an electric motor.

19. Please cancel Claim 19.

**IN THE ABSTRACT:**

Please insert the following heading and paragraph after the claims.

**ABSTRACT**

An actuator assembly including a motor having a body portion and a drive shaft, the drive shaft being drivably connected to a pinion, the pinion drivingly engaging an array of gear teeth of a gear rack the array of gear teeth having a first side adjacent the motor, in which the gear rack is pivotally mounted via a pivot about a pivot axis on the first side of the array of gear teeth.

60130-1064

**REMARKS**

Applicant has amended this application to add section hearings and delete multiple dependences in the claims. Applicant respectfully requests examination of this application.

Respectfully submitted,

**CARLSON, GASKEY & OLDS, P.C.**



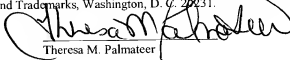
John M. Siragusa  
Registration No. 46,174  
Attorneys for Applicant  
400 West Maple Road, Suite 350  
Birmingham, Michigan 48009  
(248) 988-8360

Dated: April 23, 2001

**CERTIFICATE OF MAILING BY "EXPRESS MAIL"**

"EXPRESS MAIL" Mailing Label No. EL6688715061US. Date of Deposit April 23, 2001.

I hereby certify that this paper is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner Box PCT, Assistant Commissioner of Patents and Trademarks, Washington, D. C. 20231.



Theresa M. Palmateer

**APPENDIX A****Version with markings to show changes made**

2. (Amended) [An] The actuator assembly as [defined] recited in Claim 1 in which the pivot axis passes through the body portion.
3. (Amended) [An] The actuator assembly as [defined] recited in Claim 1 [or 2] in which the pivot axis is proximate that end of the motor remote from the pinion.
4. (Amended) [An] The actuator assembly as [defined] recited in [any proceeding] [c]Claim 1 in which the gear rack includes at least one stop to limit movement of the rack relative to the body portion.
5. (Amended) [An] The actuator assembly as [defined] recited in Claim 4 in which [the or] each stop engages the drive shaft.
6. (Amended) [An] The actuator assembly as [defined] recited in Claim 5 in which [the or] each stop engages a portion of the drive shaft on the side of the pinion remote from the motor.
7. (Amended) [An] The actuator assembly as [defined] recited in [any preceding claim] Claim 4 in which the drive shaft passes between the array of gear teeth and a guide portion proximate the gear teeth.
8. (Amended) [An] The actuator assembly as [defined] recited in Claim 7 [when dependent on any one of Claim 4-6] in which the guide portion is supported by [the or] each stop.
9. (Amended) [An] The actuator assembly as [defined] recited in [any preceding claim] Claim 1 which further includes a housing in which the motor is secured.
10. (Amended) [An] The actuator assembly as [defined] recited in Claim 9 in which the pivot is mounted on the housing.





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09/830096  
JC18 Rec'd PGT/PTO 23 APR 2001  
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### AN ACTUATOR ASSEMBLY

The present invention relates to actuator assemblies and in particular electrical actuators used to actuate components, for example door locks, door latches or door deadlocks in vehicles.

It is an object of the present invention to provide a compact actuator assembly. It is a further object to provide an actuator assembly that is easy to install. It is a further object to provide an actuator assembly that has relatively few components and is relatively cheap to produce.

Thus according to the present invention there is provided an actuator assembly including a motor having a body portion and a drive shaft, the drive shaft being drivably connected to a pinion, the pinion drivingly engaging an array of gear teeth of a gear rack the array of gear teeth having a first side adjacent the motor, in which the gear rack is pivotally mounted via a pivot about a pivot axis on said first side of the array of gear teeth.

Preferably the pivot axis passes through the body and/or is proximate that end of the motor remote from the pinion.

Preferably the gear rack includes at least one stop to limit movement of the rack relative to the body portion and preferably the drive shaft passes between the array of gear teeth and a guide portion proximate the gear teeth.

Preferably each stop supports the guide portion.

According to a further aspect of the invention there is provided an actuator assembly including a motor having a body portion and a drive shaft, the drive shaft being drivably connected to a pinion, the pinion drivingly engaging an array of gear teeth of a gear rack with the gear rack being mounted for movement on the body portion.

Preferably the motor is an electric motor.

The invention will now be described by way of example only with reference to the drawings in which:-

Figures 1, 2 and 3 are different isometric views of an actuator assembly according to the present invention.

With reference to figures 1-3 there is shown an actuator assembly 10 which includes a motor 12 (in this case an electric motor). The motor includes a body portion 14 and a drive shaft 16. The drive shaft is drivably connected to a pinion 18. The pinion 18 drivingly engages an array of gear teeth 20 fixed to a gear rack 22.

The gear rack is of generally octant shape with the array of gear teeth 20 being arranged in an arcuate manner. The array of gear teeth have a first side 21 adjacent the motor. The gear rack includes a boss 24 which fits into a hole (not shown) of a housing (not shown) to provide a pivot. Gear rack 22 thus can rotate about axis 25A of boss 24. It should be noted that axis 25A passes through body portion 14.

The housing substantially surrounds the motor and gear rack and can be substantially sealed against the ingress of contaminants eg. dirt, dust, or water. The motor is secured in the housing, preferably by engagement of each end of the drive shaft with the housing.

Preferably the housing is of at least two part form, a first part having two cut-outs each cut-out accepting and supporting one end of the drive shaft, the second part having complementary cut-outs which in conjunction with the cut-outs of the first part provide a journal bearing for each end of the drive shaft 16. The second part also has a hole to accept and provide a journal for boss 24.

In use the boss is connected to a lever situated on the outside of the housing, the lever being connected to the component to be actuated.

Extending beyond the gear teeth 20 there are two stops 26 and 28 which limit movement of the gear rack relative to the body portion 14 by engagement with the drive shaft 16. Figure 1 shows the gear rack 22 at an extreme position wherein stop 28 has engaged drive shaft 16. Figure 1 also shows (in chain dotted line) the other extreme of movement of the gear rack relative to the body portion wherein stop 26 has engaged drive shaft 16.

Guide portion 30 connects stops 26 and 28, resulting in a stronger arrangement. Guide portion 30 is mounted on the opposite side of shaft 16 to the array of gear teeth 20. Guide portion 30 includes a guide surface 32 along which the drive shaft 16 passes in close proximity or alternatively in light engagement therewith. When the motor 12 is producing torque the engagement of the pinion with appropriate gear teeth of the array causes a separating force which preferably can be counteracted by the guide surface 32

acting upon the drive shaft 16, thus reducing the load as seen by the pivot 25.

In use operation of the motor in a first rotational direction causes the pinion to move the gear rack to a first position and operation of the motor in a second rotational direction causes the pinion to move the gear rack to a second position.

In further embodiments the gear rack can be of an alternative segment shape such as a quadrant or a sextant and in yet further embodiments the gear rack need not be of a segment shape.

The invention provides for a particularly compact arrangement since a substantial part of the gear rack can be arranged to lie alongside the motor. Furthermore the actuator assembly is axially compact, it being noted that no part of the gear rack projects beyond that end of the drive shaft having the pinion secured thereto. It should also be noted that the actuator shown in the figures only has two moving parts namely the drive shaft/pinion and the gear rack.

## CLAIMS

1. An actuator assembly including a motor having a body portion and a drive shaft, the drive shaft being drivably connected to a pinion, the pinion drivingly engaging an array of gear teeth of a gear rack the array of gear teeth having a first side adjacent the motor, in which the gear rack is pivotally mounted via a pivot about a pivot axis on said first side of the array of gear teeth.

2. An actuator assembly as defined in Claim 1 in which the pivot axis passes through the body portion.

3. An actuator assembly as defined in Claim 1 or 2 in which the pivot axis is proximate that end of the motor remote from the pinion.

4. An actuator assembly as defined in any preceding claim in which the gear rack includes at least one stop to limit movement of the rack relative to the body portion.

5. An actuator assembly as defined in Claim 4 in which the stop each stop engages the drive shaft.

6. An actuator assembly as defined in Claim 5 in which the stop each stop engages a portion of the drive shaft on the side of the pinion remote from the motor.

7. An actuator assembly as defined in any preceding claim in which the drive shaft passes between the array of gear teeth and a guide portion proximate the gear teeth.

8. An actuator assembly as defined in Claim 7 when dependent on any one of Claim 4-6 in which the guide portion is supported by the or each stop.

9. An actuator assembly as defined in any preceding claim which further includes a housing in which the motor is secured.

10. An actuator assembly as defined in Claim 9 in which the pivot is mounted on the housing.

11. An actuator assembly as defined in Claim 9 or 10 in which the pivot includes a boss of the gear rack to which in use a lever is attached.

12. An actuator assembly as defined in Claim 11 in which the boss at least partially projects through the housing.

13. An actuator assembly as defined in any one of Claims 9-12 in which the drive shaft engages the housing.

14. An actuator assembly as defined in any one of Claims 9-13 in which the housing is substantially sealed.

15. An actuator assembly as defined in any one of Claims 9-14 in which the housing has at least a first and second part, the parts having co-operating cut-outs to provide for at least one end of the drive shaft.

16. An actuator assembly as defined in any one of Claims 1-9 or 11-15 when dependent upon Claim 9 in which the pivot is mounted on the body portion.

17. An actuator assembly including a motor having a body portion and a drive shaft, the drive shaft being drivably connected to a pinion, the pinion drivingly engaging an array of gear teeth of a gear rack with the gear rack being mounted for movement on the body portion.

18. An actuator assembly as defined in any preceding claim in which the motor is an electric motor.

19. An actuator assembly as herein before described with reference to or as shown in figures 1-3 of the accompanying drawings.



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International Bureau



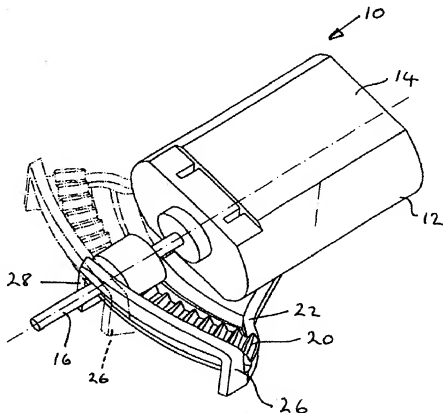
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : E05B 47/00, 65/36, H02K 7/06		A1	(11) International Publication Number: <b>WO 00/24995</b>
			(43) International Publication Date: 4 May 2000 (04.05.00)
(21) International Application Number: PCT/IB99/01748		(81) Designated States: IN, JP, KR, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
(22) International Filing Date: 21 October 1999 (21.10.99)			
(30) Priority Data: 9823220.0 24 October 1998 (24.10.98) GB		Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(71) Applicant (for all designated States except US): MERITOR LIGHT VEHICLE SYSTEMS - FRANCE [FR/FR]; 105, route d'Orléans, B.P. 48, F-45600 Sully-sur-Loire (FR).			
(72) Inventor; and			
(75) Inventor/Applicant (for US only): COLIN, Eric [FR/FR]; 5, rue des Bosquets, F-54300 Luneville (FR).			
(74) Agents: JONES, John, Bryn et al.; Withers & Rogers, Goldings House, 2 Hays Lane, London SE1 2HW (GB).			

(54) Title: AN ACTUATOR ASSEMBLY

(57) Abstract

An actuator assembly (10) including a motor (1) having a body portion (14) and a drive shaft (16), the drive shaft being drivably connected to a pinion (18), the pinion drivably engaging an array of gear teeth (20) of a gear rack (22) the array of gear teeth having a first side (21) adjacent the motor, in which the gear rack is pivotally mounted via a pivot about a pivot axis (25A) on said first side (21) of the array of gear teeth (20).



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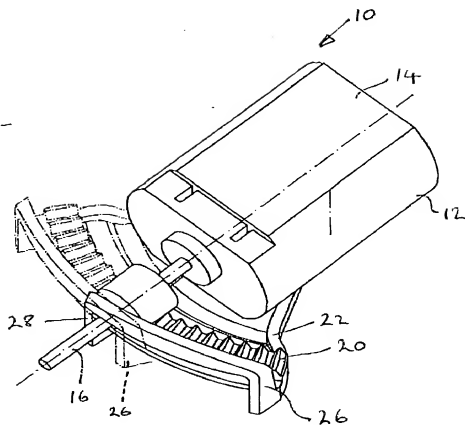
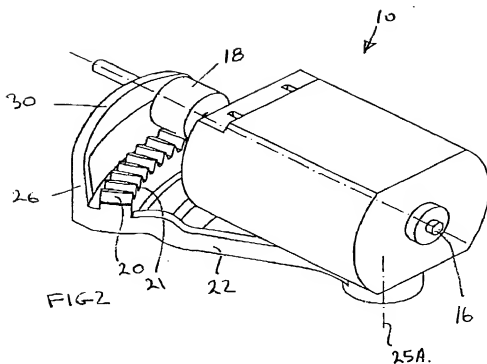


FIG. 1

EM #EL668871506US  
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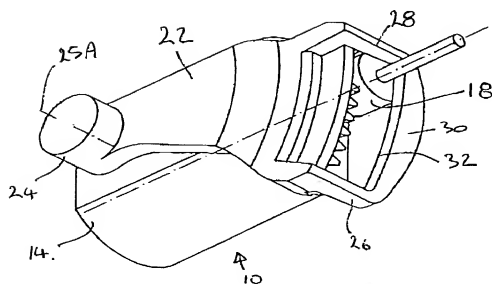


FIG. 3.

Please type a plus sign (+) inside this box **D** ☐

PTO/SB/01 (10-00)  
Approved for use through 10/31/2002. OMB 0851-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# **DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)**

☐ Declaration Submitted with Initial Filing **OR** ☒ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.18 (e)) required)

Attorney Docket Number 60,130-1064 / 98UK011

First Named Inventor Eric Colin

**COMPLETE IF KNOWN**

Application Number 09 / 830,098

Filing Date April 23, 2001

Group Art Unit

Examiner Name

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ACTUATOR ASSEMBLY

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 04/23/2001 as United States Application Number or PCT International

Application Number 09/830,098 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.58, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT International filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(e) of any PCT International application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?
PCT/IB99/01748	PCT	10/21/1999	<input type="checkbox"/>	<input type="checkbox"/>
GB 9823220.0	United Kingdom	10/24/1998	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s) Filing Date (MM/DD/YYYY)

☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

(Page 1 of 2)

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DECLARATION		REGISTERED PRACTITIONER INFORMATION (Supplemental Sheet)	
Name	Registration Number	Name	Registration Number
M. Lee Murrah	27,460		
Theodore W. Olds	33,080		
John E. Carlson	37,794		
David J. Gaskey	37,139		
Kerrie A. Laba	42,777		
William S. Gottschalk	44,130		
David L. Wisz	46,350		
Karin H. Butchko	45,864		
John M. Siragusa	46,174		
Anthony P. Cho	47,209		
Anna M. Shih	36,372		

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**DECLARATION E Utility or Design Patent Application**

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:

☐ A petition has been filed for this unsigned inventorGiven Name  
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or Surname ColinInventor's  
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(first and middle (if any))Family Name  
or SurnameInventor's  
Signature

Date

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☐ Additional inventors are being named on the \_\_\_\_\_ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.